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•DISCOVER THE GIANTS OF THE PREHISTORIC WORLD•

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Discover the special features of three more exciting dinosaurs
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BARAPASAURUS 820
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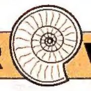

DINOSAUR WORLD

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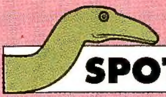

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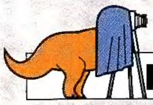

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DINOSAURS! is published by
Orbis Publishing Ltd
Griffin House
161 Hammersmith Rd
London W6 8SD
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N35 93 12 2

Printed in Italy by Officine Grafiche De Agostini, Novara

EDMONTOSAURUS

One of the biggest of the duckbilled dinosaurs, *Edmontosaurus* was longer than the net across a tennis court.

E*dmontosaurus* lived alongside horned dinosaurs such as *Chasmosaurus* and *Triceratops* in the warm, damp climate of the Late Cretaceous. *Edmontosaurus* spent its days browsing among sub-tropical shrubs and low tree ferns. Its remains have been found inside the Arctic Circle so it was also able to live in a cool climate.

WIDE MOUTH

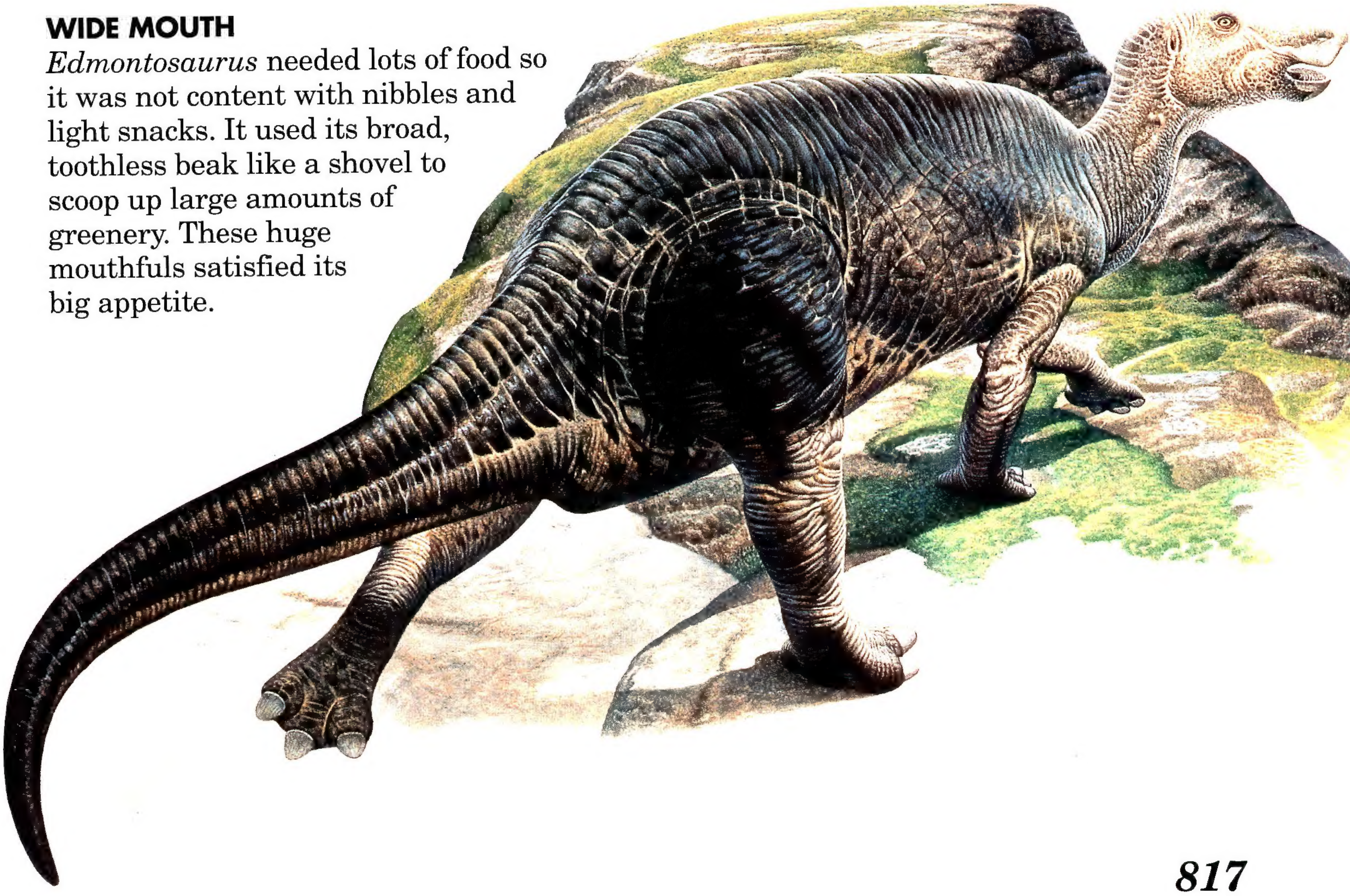
Edmontosaurus needed lots of food so it was not content with nibbles and light snacks. It used its broad, toothless beak like a shovel to scoop up large amounts of greenery. These huge mouthfuls satisfied its big appetite.

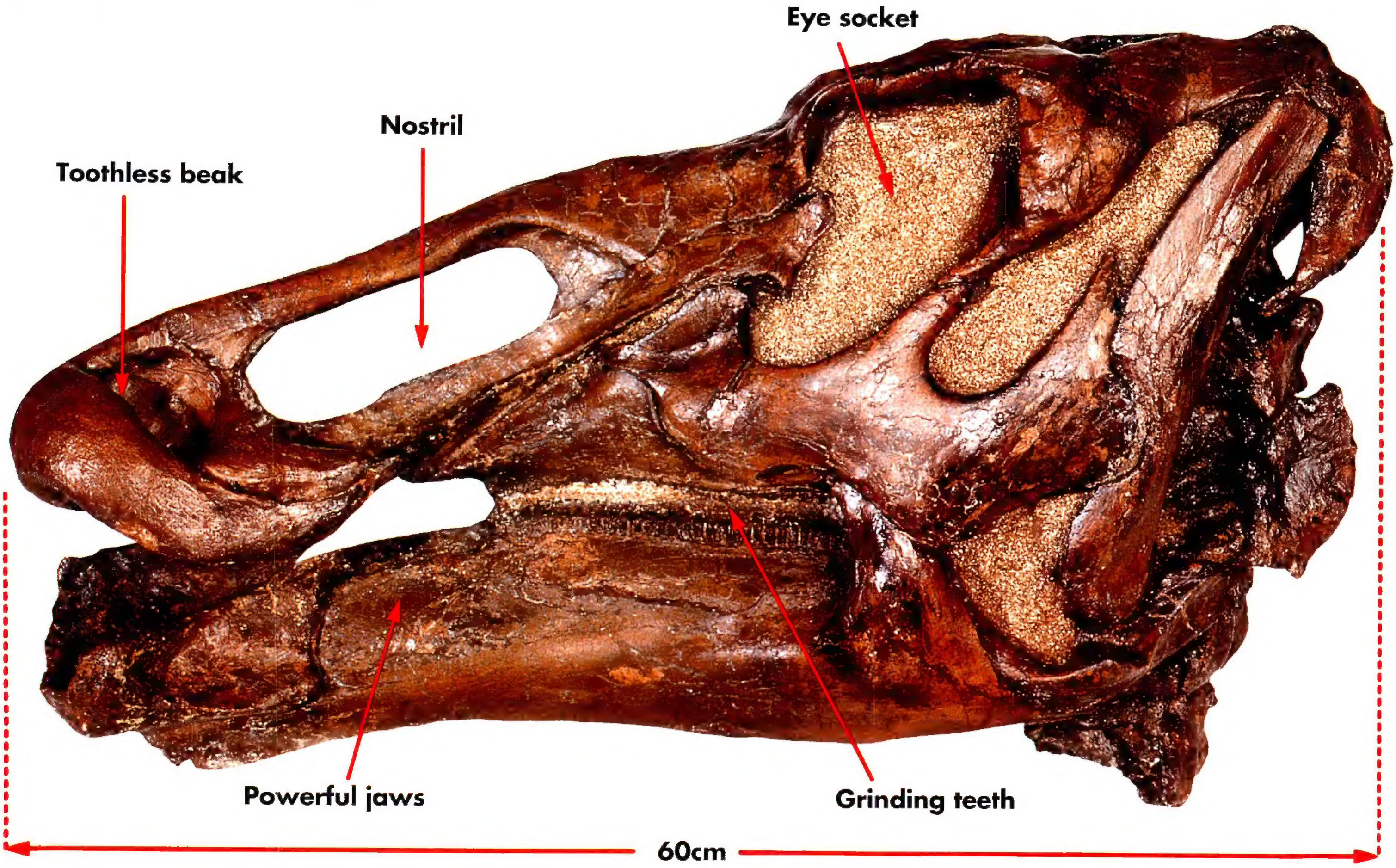
NEW TEETH FOR OLD

Inside its jaws *Edmontosaurus* had about 1000 teeth. They were set in rows to form a rough, grinding surface. As teeth wore out, new ones grew to replace them.

TWIG GRINDERS

When its mouth was full of food, the dinosaur's powerful jaw muscles moved its teeth up and down to slice and chop the toughest shoots and twigs. Experts have found fossilized stomach contents which show that *Edmontosaurus* had no problems eating woody plants.





NOISY NOSE

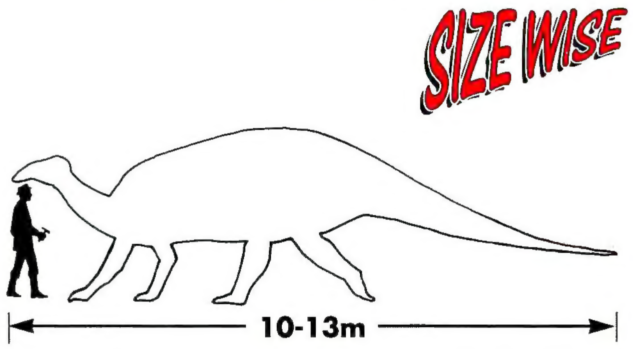
If you let air out of a balloon you can control the sound by stretching the neck to make it wider or narrower. *Edmontosaurus* may have had a flap of skin above its nose that filled with air like a balloon. As the air bounced off the bones in its nose, it made a loud noise. Other dinosaurs may have heard it from far away and recognised *Edmontosaurus*' special call.

FRIGHTENING FLAP

Edmontosaurus may have had another use for its expandable nose flap. The dinosaur may have inflated it as a sort of warning signal to other males. It was probably a sign to others in the group to stay away, especially in the mating season. Male elephant seals today inflate their bulbous snouts in a similar way to frighten off any rivals that dare enter their territory.

MONSTER FACTS

- **NAME:** *Edmontosaurus* (ed-mont-oh-saw-rus) means 'Edmonton reptile'
- **SIZE:** about 10 -13m long
- **FOOD:** plants
- **LIVED:** about 70 million years ago in the Late Cretaceous Period in Alberta, Canada; also in Montana and New Jersey, USA



Is it true that low-browsers made flowers grow ?

The big plant-eaters of the Cretaceous Period munched their way through low-growing plants. Wide-beaked duckbills like *Edmontosaurus* and long-snouted horned dinosaurs demolished the vegetation that grew at ground level. Fast-growing flowering plants spread quickly whereas non-flowering plants like ferns and conifers did not have time to become established before the hungry herbivores returned for more. So the flowers flourished in the colourful Cretaceous landscape, carpeting the ground.

LANDLUBBER

Edmontosaurus spent most of its time on land, striding around on two powerful legs. Its hind legs were like pillars under the great weight of its body. Its feet had three toes to spread its weight. The claws on its hands and feet were like small hooves.

SWIMMING FOR SAFETY

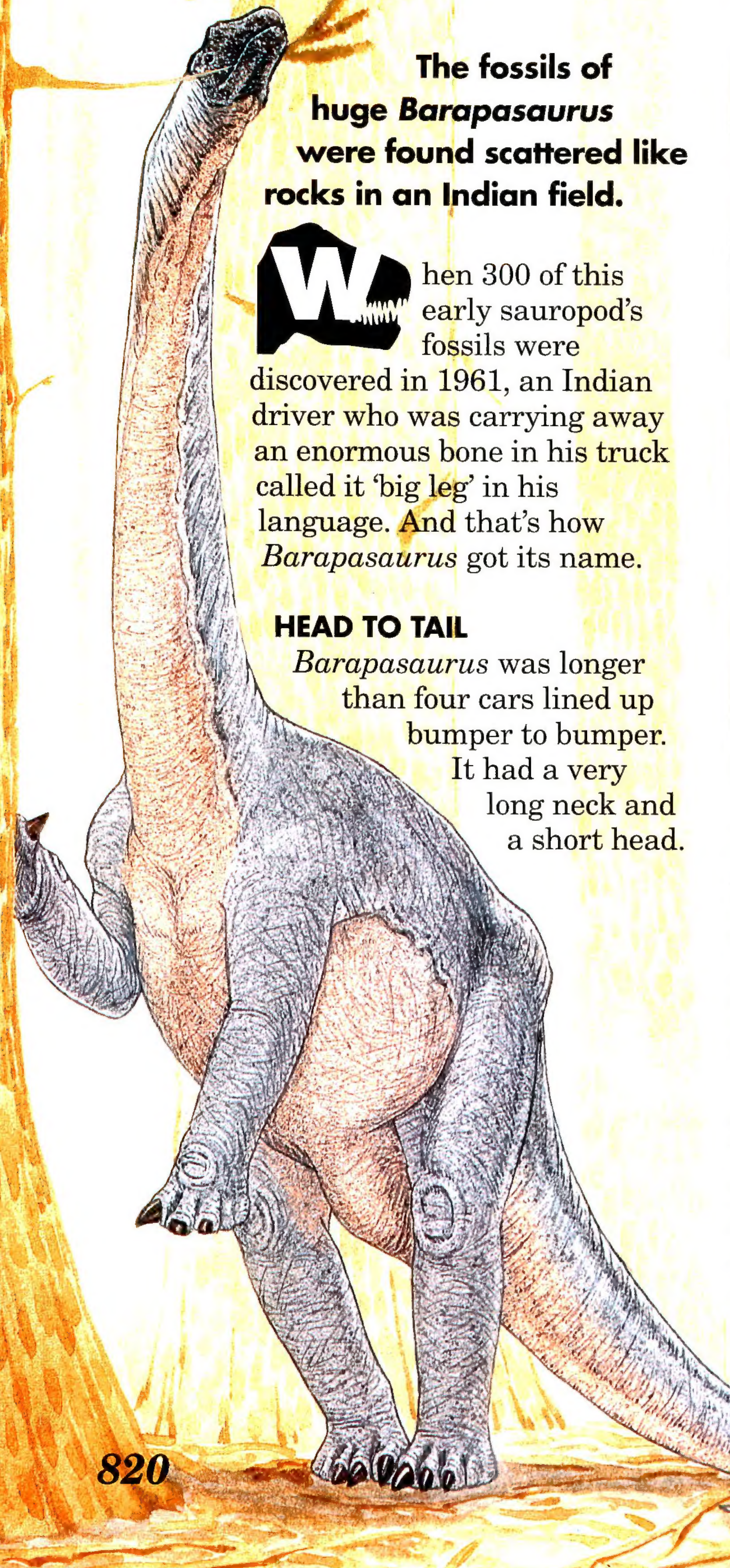
Experts think that *Edmontosaurus* could swim and this may have helped save its life. Its paddle-like hands and long, deep tail were useful for cutting through deep water.

SCALY SKIN

Among the many fossils of *Edmontosaurus*, experts have found impressions of its skin. Its scaly surface was perfect for hot climates, as it did not lose water and dry out in the heat of the sun.

***Edmontosaurus* raises its head to trumpet warnings at rival males.**

BARAPASAURUS

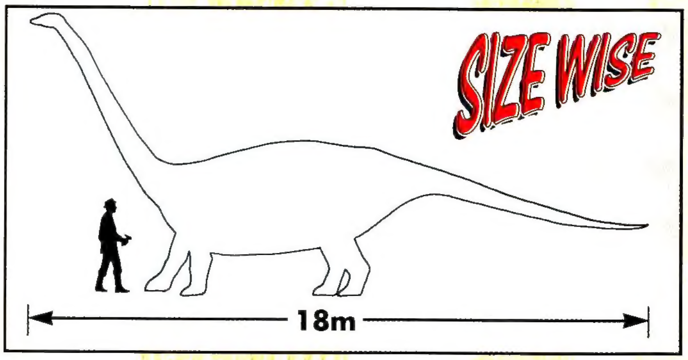


The fossils of huge *Barapasaurus* were found scattered like rocks in an Indian field.

When 300 of this early sauropod's fossils were discovered in 1961, an Indian driver who was carrying away an enormous bone in his truck called it 'big leg' in his language. And that's how *Barapasaurus* got its name.

HEAD TO TAIL

Barapasaurus was longer than four cars lined up bumper to bumper. It had a very long neck and a short head.



MONSTER FACTS

- **NAME:** *Barapasaurus* (ba-ra-pa-saw-rus) means 'big leg reptile'
- **SIZE:** about 18m long
- **FOOD:** plants
- **LIVED:** about 190 million years ago in the Early Jurassic Period in the Kota area of central India

BULKY BODY

Barapasaurus had an enormous, bulky body and walked on four strong legs. When the animal was threatened by predators, it may have reared up on its hind legs, with its tail held stiffly out behind it for balance.

CRUNCHY LUNCH

With its spoon-shaped teeth *Barapasaurus* raked off pine needles from the branches of tall conifer trees. Its teeth were no good at grinding. Rather than chewing its crunchy meal, *Barapasaurus* probably swallowed sharp stones. The stones mashed up the plants in its stomach, making the meal easier to digest.

INGENIA

Mysterious *Ingenia* was built for speed and had a deadly grip.

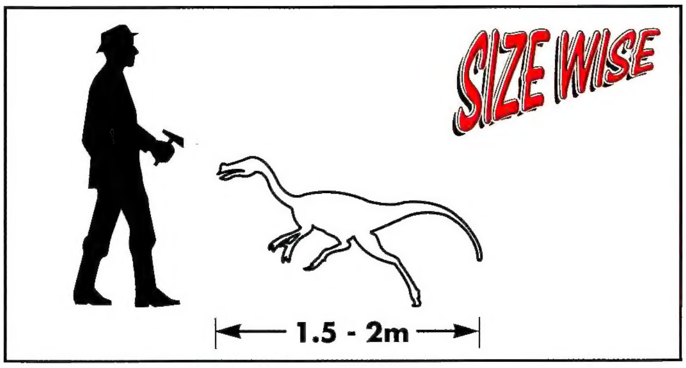
Very few remains of this nimble dinosaur have been found, so no one is really sure what it ate or how it looked. Experts think it was similar to the egg thief *Oviraptor*.

FAST SPRINTER

Ingenia sprinted with great agility on two slender legs. On its feet it had three narrow toes, with the first small, hooked toe set on the inside of its foot.

THREE FINGERS

Ingenia had three fingers on each hand. It probably used its fingers for gripping branches or grabbing hold of small, wriggling animals. The first finger had a thick, heavy claw about 6cm long. If you crook your middle finger, you will have a good idea of the length of *Ingenia*'s claw.

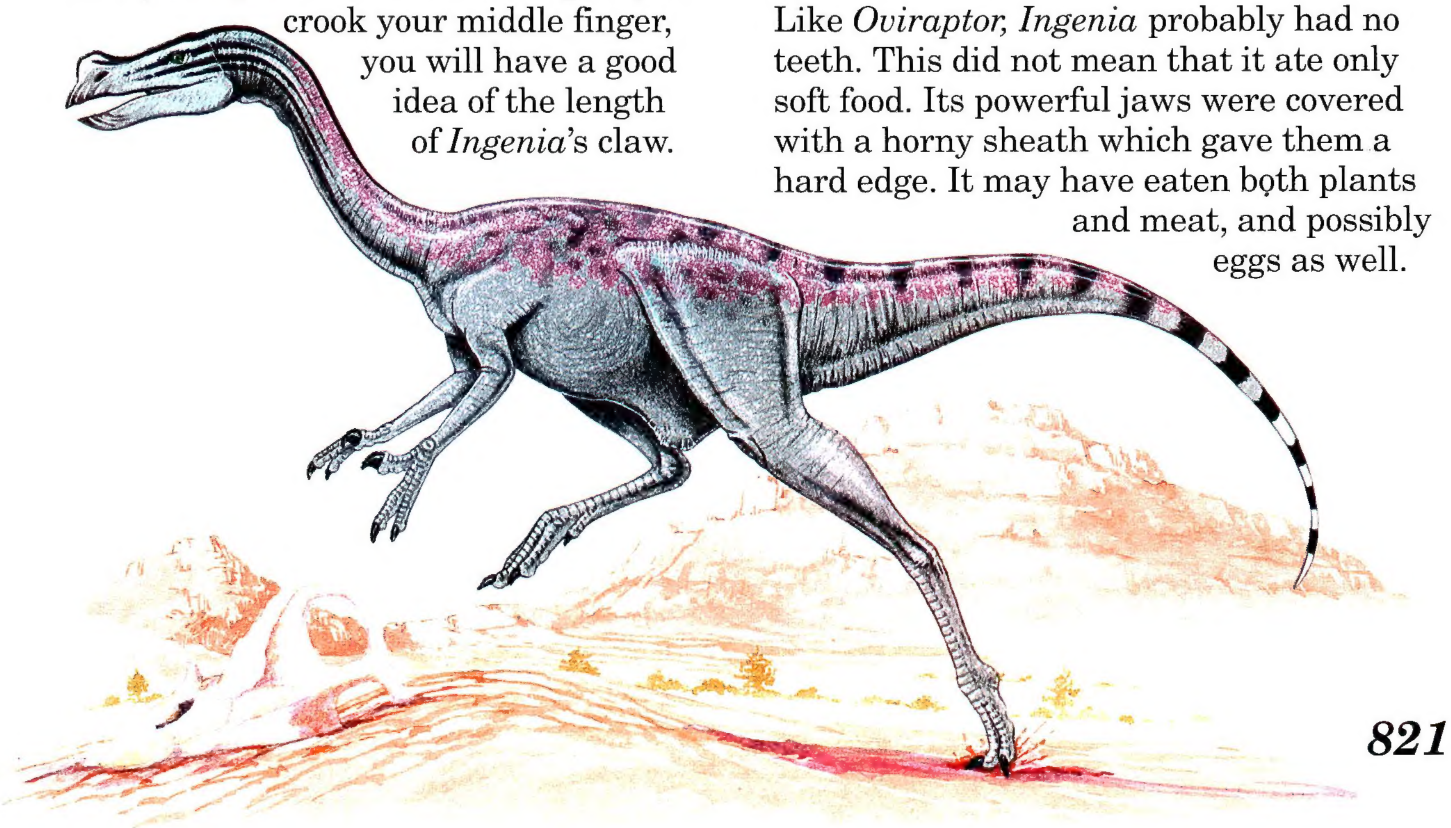


MONSTER FACTS

- **NAME:** *Ingenia* (in-gane-ia) was named after Ingeni-Tsav, a place in Mongolia
- **SIZE:** about 1.5 - 2m long
- **FOOD:** Possibly both plants and animals
- **LIVED:** about 70 million years ago in the Late Cretaceous Period in south-west Mongolia

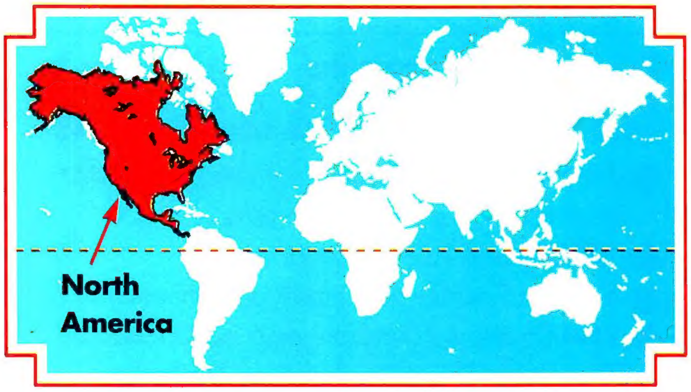
TOOTHLESS JAW

Like *Oviraptor*, *Ingenia* probably had no teeth. This did not mean that it ate only soft food. Its powerful jaws were covered with a horny sheath which gave them a hard edge. It may have eaten both plants and meat, and possibly eggs as well.



Dinosaurs from North America 1

Which dinosaurs lived in North America during the Triassic and Jurassic Periods?



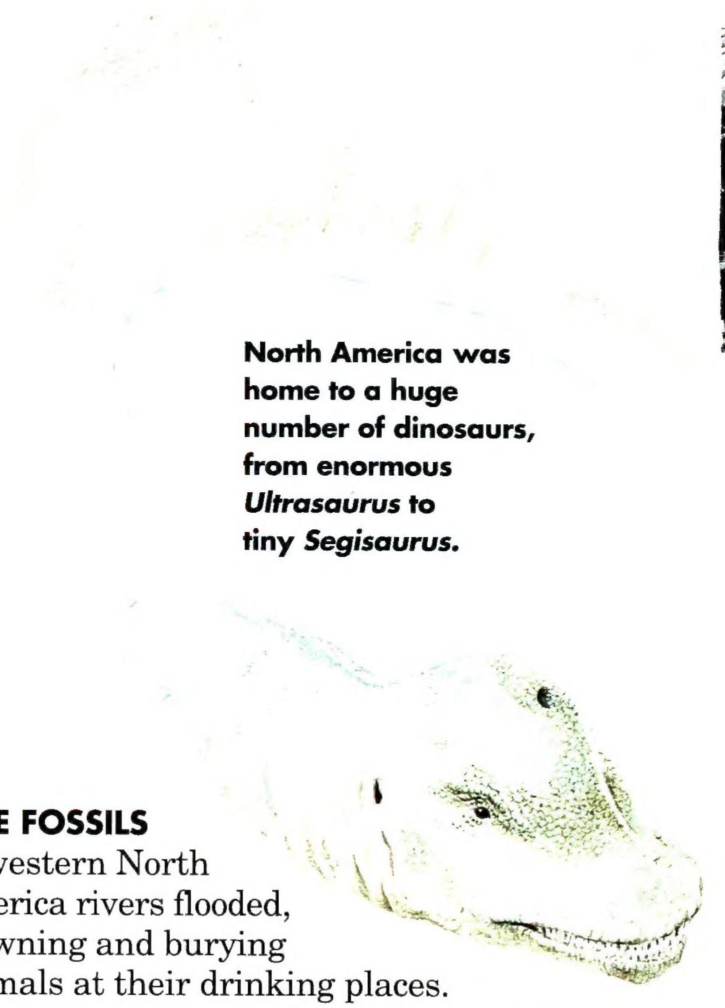
Think of some really famous dinosaurs: *Stegosaurus, Diplodocus, Triceratops, Tyrannosaurus*. They all lived in North America. In fact, most of the dinosaurs you have ever heard of were found there. Why? There are several reasons.

GOOD WEATHER

As the Age of the Dinosaurs began, the weather was warm and dry. It became damper towards the second period, the Jurassic, so that many plants grew as food.

WELL CONNECTED

North America was connected to the rest of the world for millions of years, so dinosaurs came and went, spreading easily.



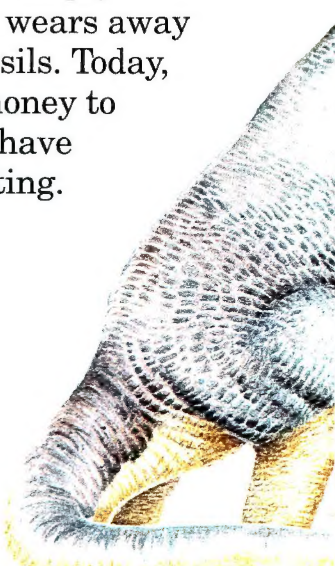
North America was home to a huge number of dinosaurs, from enormous *Ultrasaurus* to tiny *Segisaurus*.

FINE FOSSILS

In western North America rivers flooded, drowning and burying animals at their drinking places. These are good places for finding fossils. The Badlands are barren and empty places, where harsh weather wears away the rocks and exposes the fossils. Today, the USA and Canada have money to fund dinosaur digs, and also have great traditions of fossil-hunting.

BIGGEST EVER

North America was home to some enormous dinosaurs, including *Ultrasaurus* and *Seismosaurus*. Experts think *Seismosaurus* may have been the biggest animal that ever lived – even bigger than today's blue whale!



Ceratosaurus

BONE ALONE

Ultrasaurus was a sauropod, a close relative of *Brachiosaurus.* Its upper-arm bone alone is much bigger than an adult human. In life, this incredible giant was probably more than 30m long and 15m tall.

LAND OF THE GIANTS

Many other long-necked sauropods lived in North America, including *Camarasaurus, Brachiosaurus, Apatosaurus, Diplodocus* and *Supersaurus,* another giant almost as big as *Ultrasaurus.*

MID-SIZED DINOSAURS

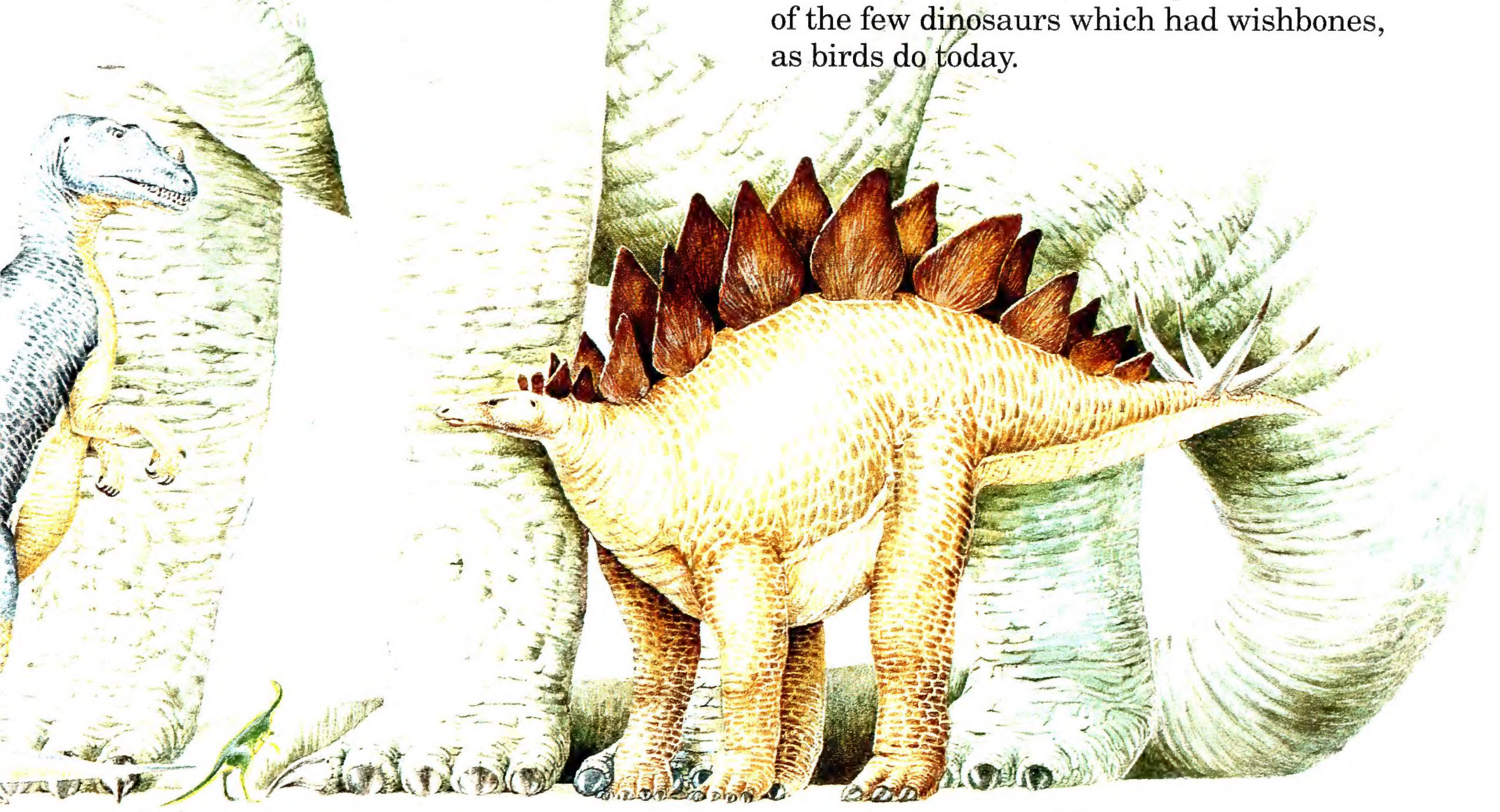
One of North America's medium-sized dinosaurs was *Stegosaurus.* Lots of its fossils have been dug up, which show that it was very common for over 10 million years. This was despite its tiny brain, its small head and useless-looking teeth, and the unwieldy great plates along its back!

What is? A WISHBONE

Birds have a V-shaped bone called the wishbone (furcula) at the front of their chests. It helps their wing muscles to work. The wishbone is similar to a human collarbone. Most dinosaurs did not have wishbones or collarbones. One of the few that did was *Segisaurus.* This may be a clue that birds evolved from dinosaurs.

MINI-SIZED DINOSAURS

At the other end of the scale were some tiny dinosaurs. *Segisaurus* was only 1m long, but it was built for speed. It whizzed along on its back legs, catching small animals with its clawed fingers. An early, meat-eating theropod, *Segisaurus* lived in Arizona 180 million years ago. It was one of the few dinosaurs which had wishbones, as birds do today.



DINOSAUR ROCKS

Today, rocks from the Triassic and Jurassic stretch all along the west coast of North America, from Alaska down to Colorado.

FOSSILS GALORE

The rocks have been pushed up by the Rocky Mountains, and they are full of dinosaur fossils. The state of Utah is one of the best for finding fossils, with more than 5,000 dinosaur finds. In 1953 a Dinosaur National Monument was set up there where today visitors can watch scientists as they slowly and carefully excavate fossil dinosaur bones.

RIVERS OLD AND NEW

Today the Green River cuts through rocks laid down 150 million years ago. At that time a prehistoric river swept dead dinosaurs on to sandbars and covered them with silt, which preserved them.

In Early Jurassic North America *Dilophosaurus* kicks up the dust as it savagely attacks a group of *Scutellosaurus.*

The stunning landscape of the Rocky Mountains (below), which stretch along the west coast of North America. Many dinosaur fossils are found there.

FOUR-METRE PLANT-EATER

The hypsilophodontids were smallish plant-eaters of the Jurassic. *Dryosaurus,* the 'oak reptile' was one of them. It was nearly 4m long from nose to tail, and as tall as an adult human. *Dryosaurus* ran on its back legs with its tail stuck out stiffly behind. It searched for the best plant parts with the five clawed fingers on each hand.

PET-SIZED DINOSAURS

Some early ornithischians were small, pet-sized dinosaurs, like family dogs. One called *Scutellosaurus* lived in North America 190 million years ago. It was only about 1.3m long, and half of that was its tail. Like its cousins from Europe, Africa and Asia, *Scutellosaurus* was a speedy animal. It evaded enemies by running on its back legs. It had the added protection of small, hard, bony plates in its skin.

In Utah today the Green River (below) has worn deep canyons through the red rocks where dinosaur fossils are buried.

BIGGER AND BADDER

The carnosaurs got bigger and more terrifying through the Age of the Dinosaurs. *Ceratosaurus* lived 150 million years ago in Colorado. It was a bit larger than *Dilophosaurus* and much heavier. Its back legs were like tree trunks, and it had tiny arms. Its huge head had bone ridges on the eyebrows, and a horn on its nose.

BADDIES OF THE BADLANDS

Terrible meat-eating dinosaurs roamed North America during the Jurassic. One of the first was *Dilophosaurus*. It had two half circles of bone on its head, like half dinner plates. *Dilophosaurus* was about 6m long. It may have scavenged, or run after prey on its strong back legs, and grabbed it with its four-fingered hands.

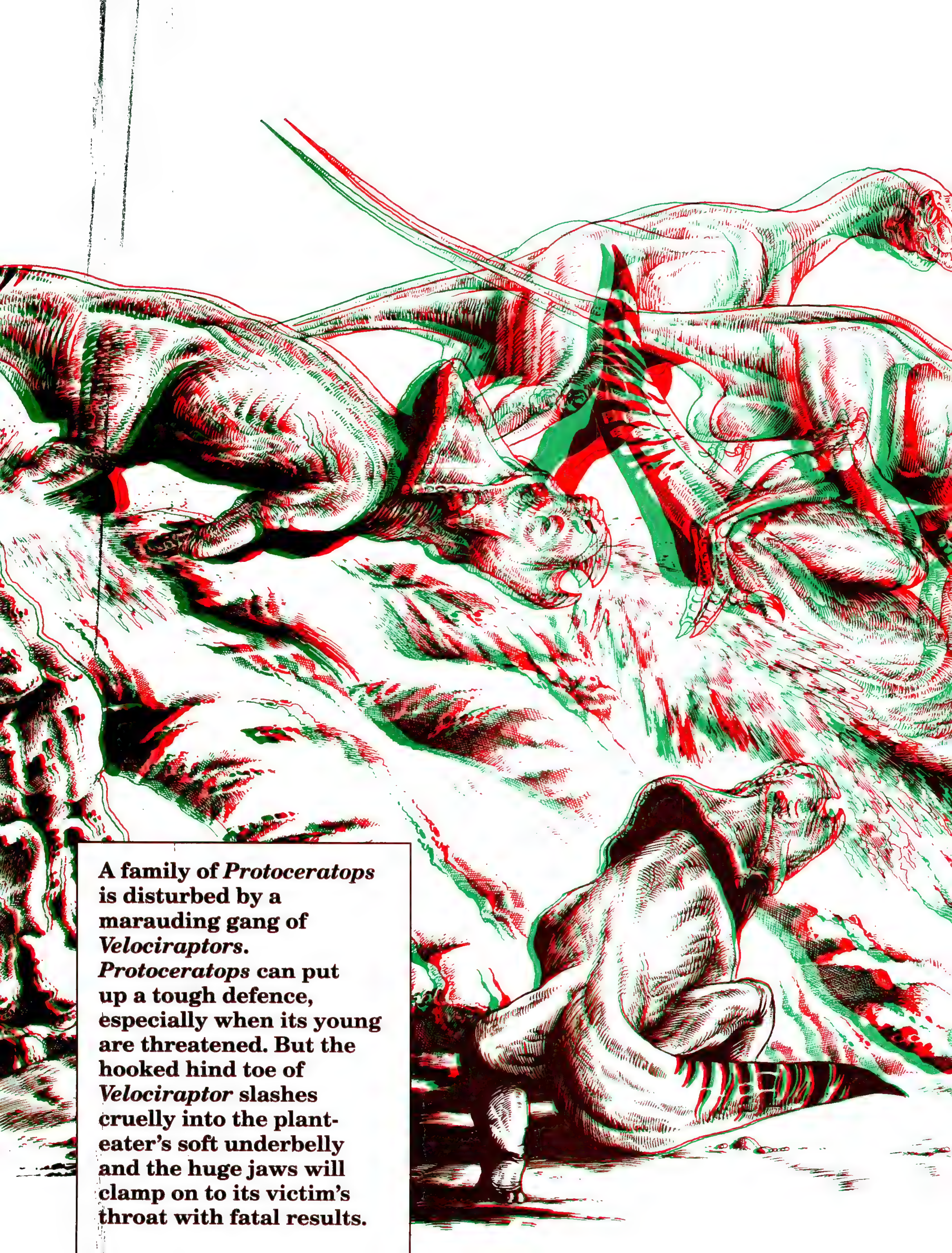
KING OF THE CARNOSAURS

The biggest Jurassic meat-eater was *Allosaurus*. Its jaws were longer than your arms and lined with long, curved teeth. But the biggest killer was yet to come. At the end of the Cretaceous, 70 million years later, *Tyrannosaurus rex* appeared!

GIANTS OF THE PAST

EDMONTOSAURUS

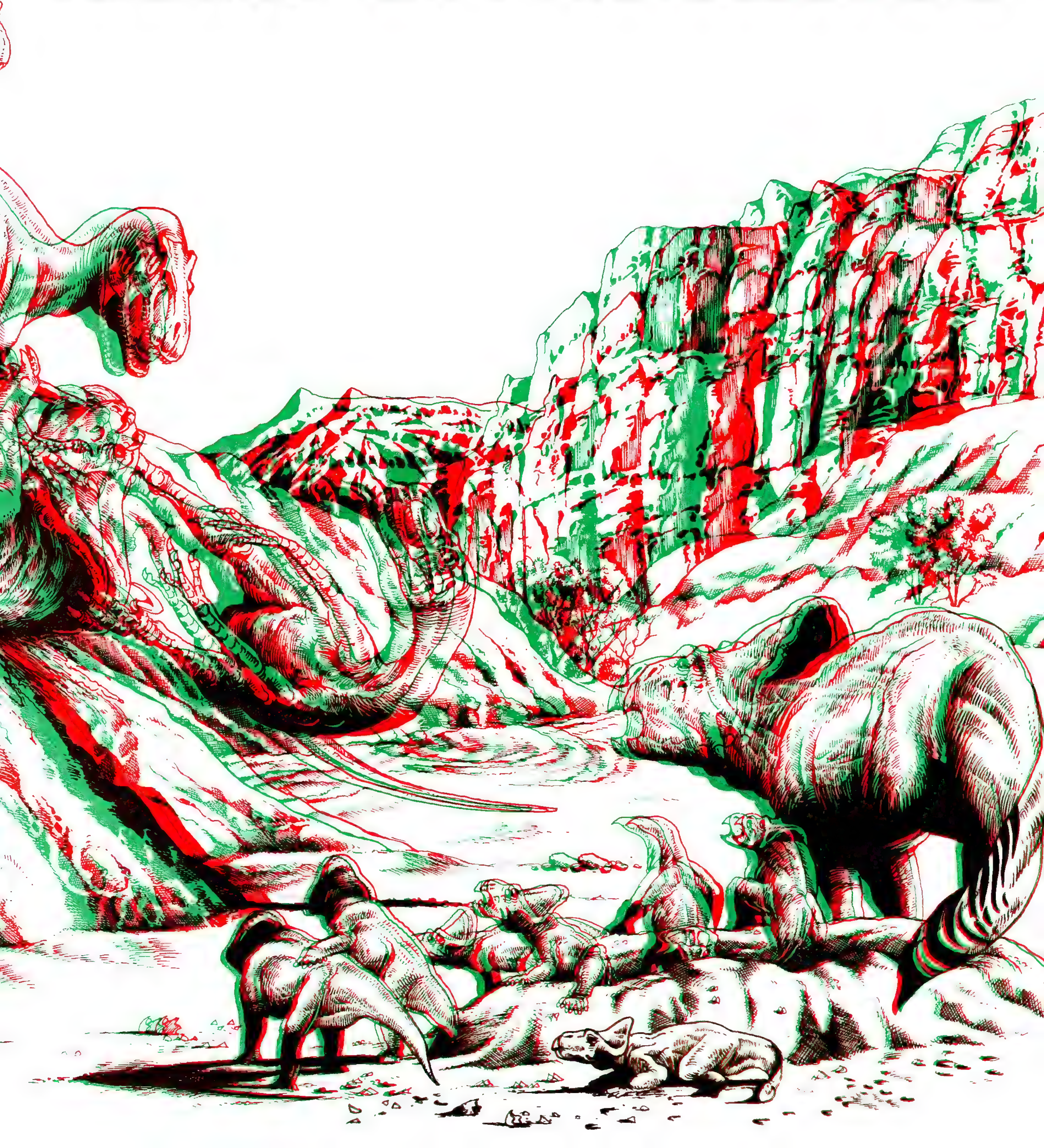
A small herd of *Edmontosaurus* swims across a lake in search of fresh foliage to feed on. The shore the dinosaurs have left behind was completely dry and barren. But here there are lush ferns and forests of tall fir trees. The peaceful creatures calmly browse in the open, for once undisturbed by predators.



A family of *Protoceratops* is disturbed by a marauding gang of *Velociraptors*. *Protoceratops* can put up a tough defence, especially when its young are threatened. But the hooked hind toe of *Velociraptor* slashes cruelly into the plant-eater's soft underbelly and the huge jaws will clamp on to its victim's throat with fatal results.

3-D Gallery 44

VELOCIRAPTOR V PROTOCERATOPS



INSIDE A DINOSAUR

Heart and lungs

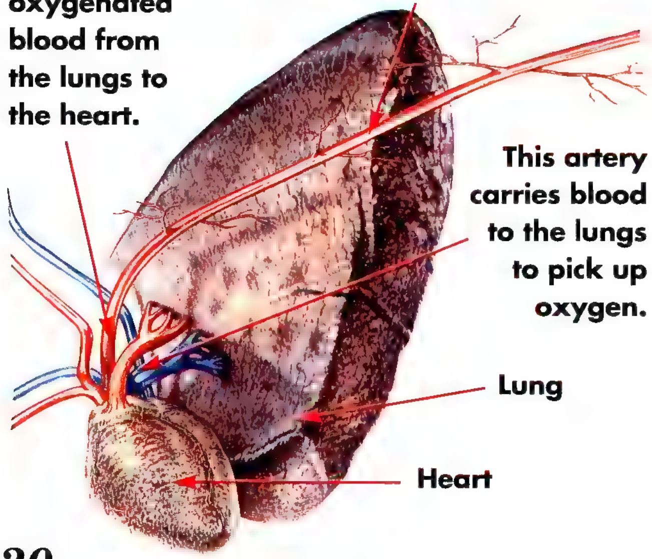
What did a dinosaur's heart and lungs look like, from the inside?

Nobody knows for sure what the heart and lungs of a dinosaur looked like. This is because organs do not fossilize. But scientists have worked out what they probably looked like and how they worked.

POWERFUL HEARTS

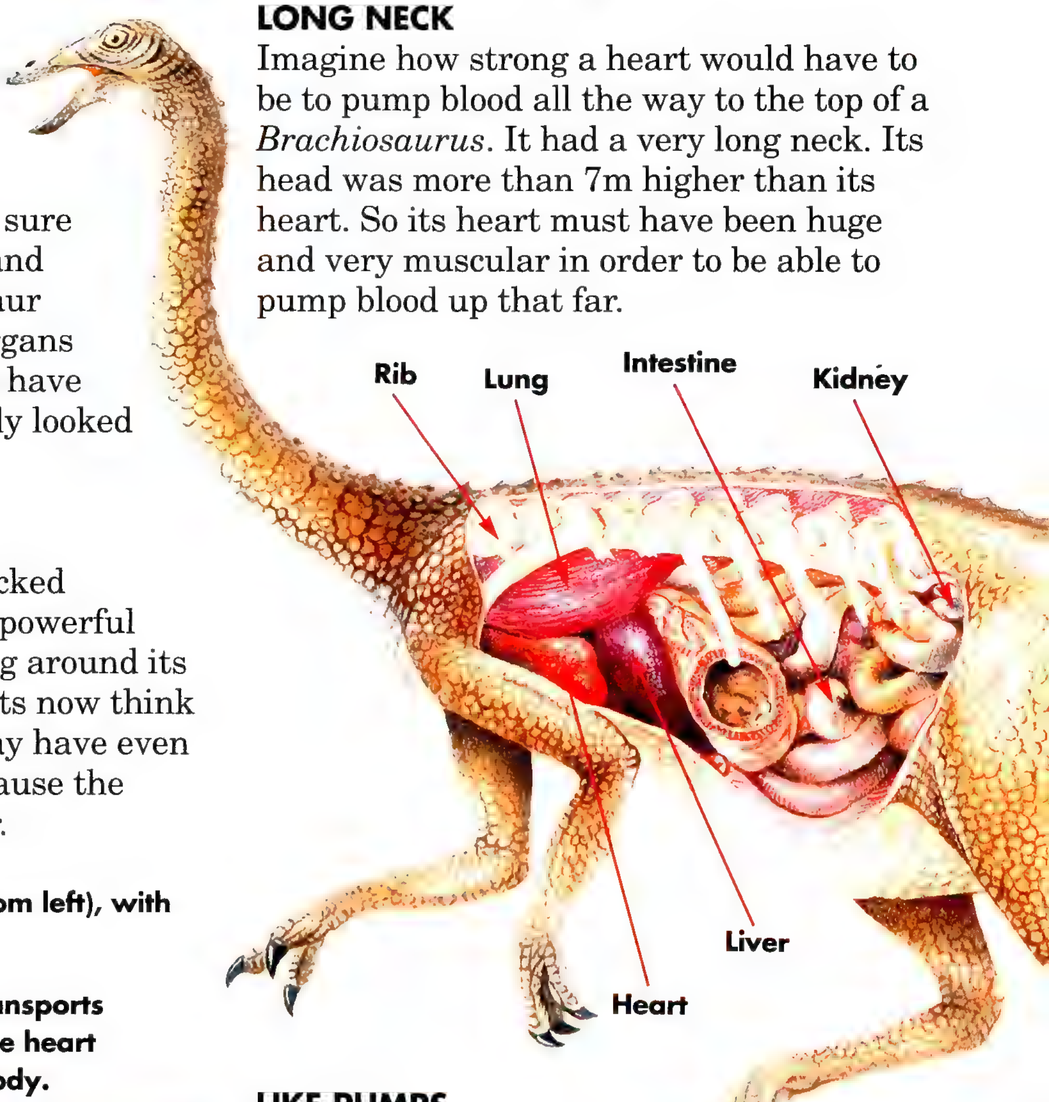
A giant sauropod like long-necked *Brachiosaurus* needed a very powerful heart to keep the blood moving around its enormous body. Some scientists now think that these huge sauropods may have even had more than one heart, because the blood had to be pumped so far.

Below: *Brachiosaurus'* heart (bottom left), with its huge lung behind it.


This vein carries oxygenated blood from the lungs to the heart.
This artery transports blood from the heart around the body.
This artery carries blood to the lungs to pick up oxygen.
Lung
Heart

LONG NECK

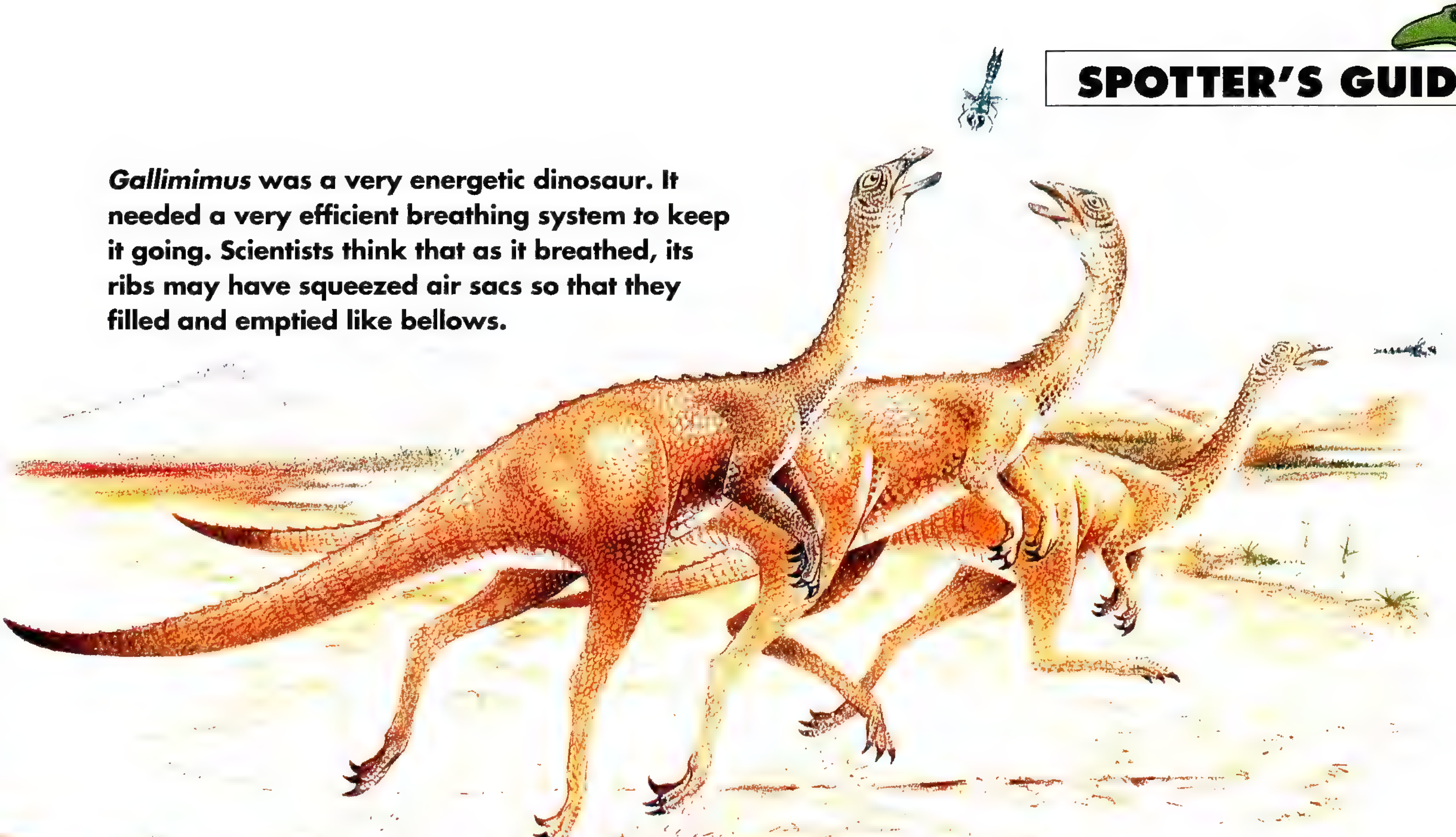
Imagine how strong a heart would have to be to pump blood all the way to the top of a *Brachiosaurus*. It had a very long neck. Its head was more than 7m higher than its heart. So its heart must have been huge and very muscular in order to be able to pump blood up that far.

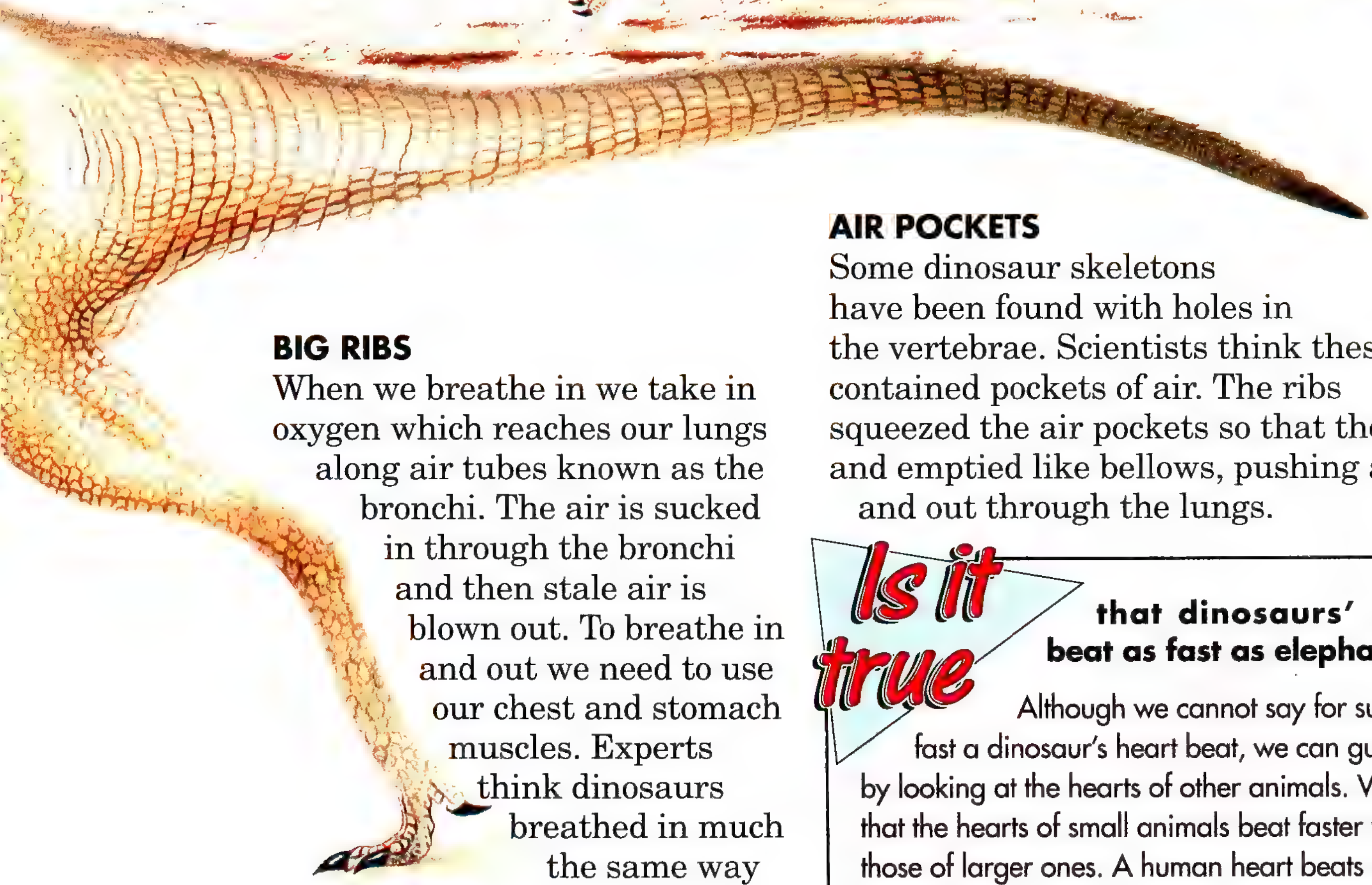


LIKE PUMPS

Dinosaurs' hearts probably had two pumps, like humans'. One pump sent blood round the body, the other sent it to the lungs. Blood was sent to the lungs to get oxygen. The oxygenated blood then returned to the pump on the other side of the heart. From there it travelled round the body. Valves in the heart acted like doors opening and closing. They kept the blood flowing one way, rather than sloshing about going nowhere.

***Gallimimus* was a very energetic dinosaur. It needed a very efficient breathing system to keep it going. Scientists think that as it breathed, its ribs may have squeezed air sacs so that they filled and emptied like bellows.**





BIG RIBS

When we breathe in we take in oxygen which reaches our lungs along air tubes known as the bronchi. The air is sucked in through the bronchi and then stale air is blown out. To breathe in and out we need to use our chest and stomach muscles. Experts think dinosaurs breathed in much the same way as humans do. They can tell how big a dinosaur's lungs were just by looking at the size of its rib cage. If it has a large rib cage we know that it had large lungs.

AIR POCKETS

Some dinosaur skeletons have been found with holes in the vertebrae. Scientists think these contained pockets of air. The ribs squeezed the air pockets so that they filled and emptied like bellows, pushing air in and out through the lungs.

Is it true that dinosaurs' hearts beat as fast as elephants'?

Although we cannot say for sure how fast a dinosaur's heart beat, we can guess at it by looking at the hearts of other animals. We know that the hearts of small animals beat faster than those of larger ones. A human heart beats at around 70 times a minute; an elephant's beats at about 25. So perhaps a dinosaur such as *Triceratops*, which was the size of an elephant, had a heart which beat at about 30 times a minute.

Dinosaur Families

Hundreds of dinosaurs have been discovered. Scientists have organised them into different groups to make it easier to study them.

Each dinosaur is placed in six different groups: Order, Suborder, Infraorder, Family, Genus, and Species. The Order is the largest group; Species is the smallest. Arranging dinosaurs in this way is called a classification because scientists classify, or place, them into groups.

TWO GREAT ORDERS

The biggest dinosaur group is called an **Order**. There are two Orders. Dinosaurs are placed in one or other of them depending on the design of their hip bones. Dinosaurs with lizard-like hips go in the Order Saurischia. The Order Ornithischia is for those with bird-like hips.

IT'S A FACT

TALKING ABOUT DINOSAURS

We usually use just the first part of a dinosaur's name – the Genus name. This is because there is often not enough information to divide them up into Species, or because there is only one Species in the Genus. Adding the Species name is not always necessary. *Tyrannosaurus* is a good example of this.

HOW TO CLASSIFY A DINOSAUR

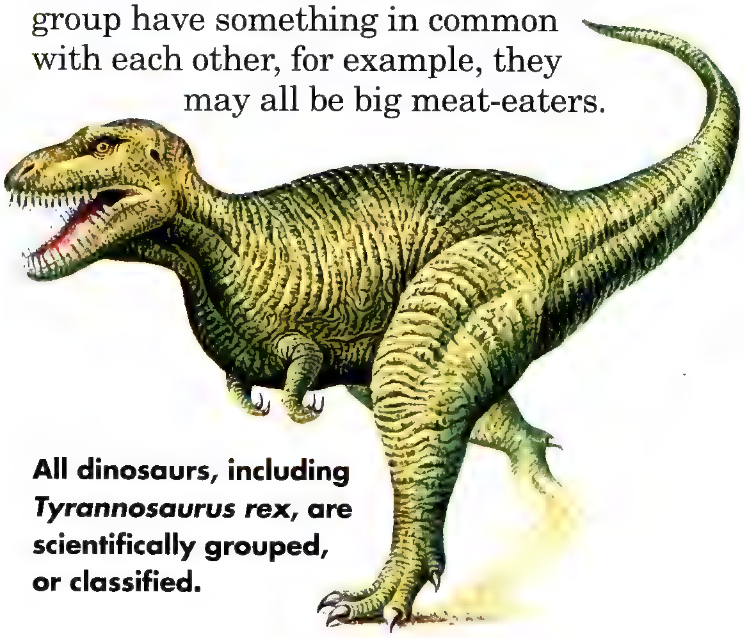
When a new dinosaur is discovered it is studied by experts. They decide which dinosaurs are its closest relatives. It is grouped with them and they form a **Family**. The Families that are most similar are joined to make a larger group called an **Infraorder**. The Infraorders most like each other are then linked to make a bigger unit called a **Suborder**. Finally, the Suborders that are most alike are joined together, then divided into two huge groups called **Orders**.

UNDERSTANDING A NAME

Each group is given a scientific name based on Greek or Latin words which scientists all over the world understand.

HOW TO CLASSIFY T REX

The chart on the right shows how scientists classify *Tyrannosaurus rex*. There are six groups. Some groups contain other dinosaurs that look very different from *T rex*. But the dinosaurs in each group have something in common with each other, for example, they may all be big meat-eaters.



All dinosaurs, including *Tyrannosaurus rex*, are scientifically grouped, or classified.

HOW TO CLASSIFY T REX

ORDER:

Saurischia

Tyrannosaurus rex belongs to the Order Saurischia because it is a lizard-hipped dinosaur.

SUBORDER:

Theropoda

T rex is placed in the Suborder Theropoda because it is a two-legged meat-eater (a theropod).

INFRAORDER:

Carnosauria

T rex is a member of the Infraorder Carnosauria because it is a carnosaur (big meat-eater).

FAMILY:

Tyrannosauridae

T rex belongs to the Family Tyrannosauridae, usually called the tyrannosaurids.

GENUS:

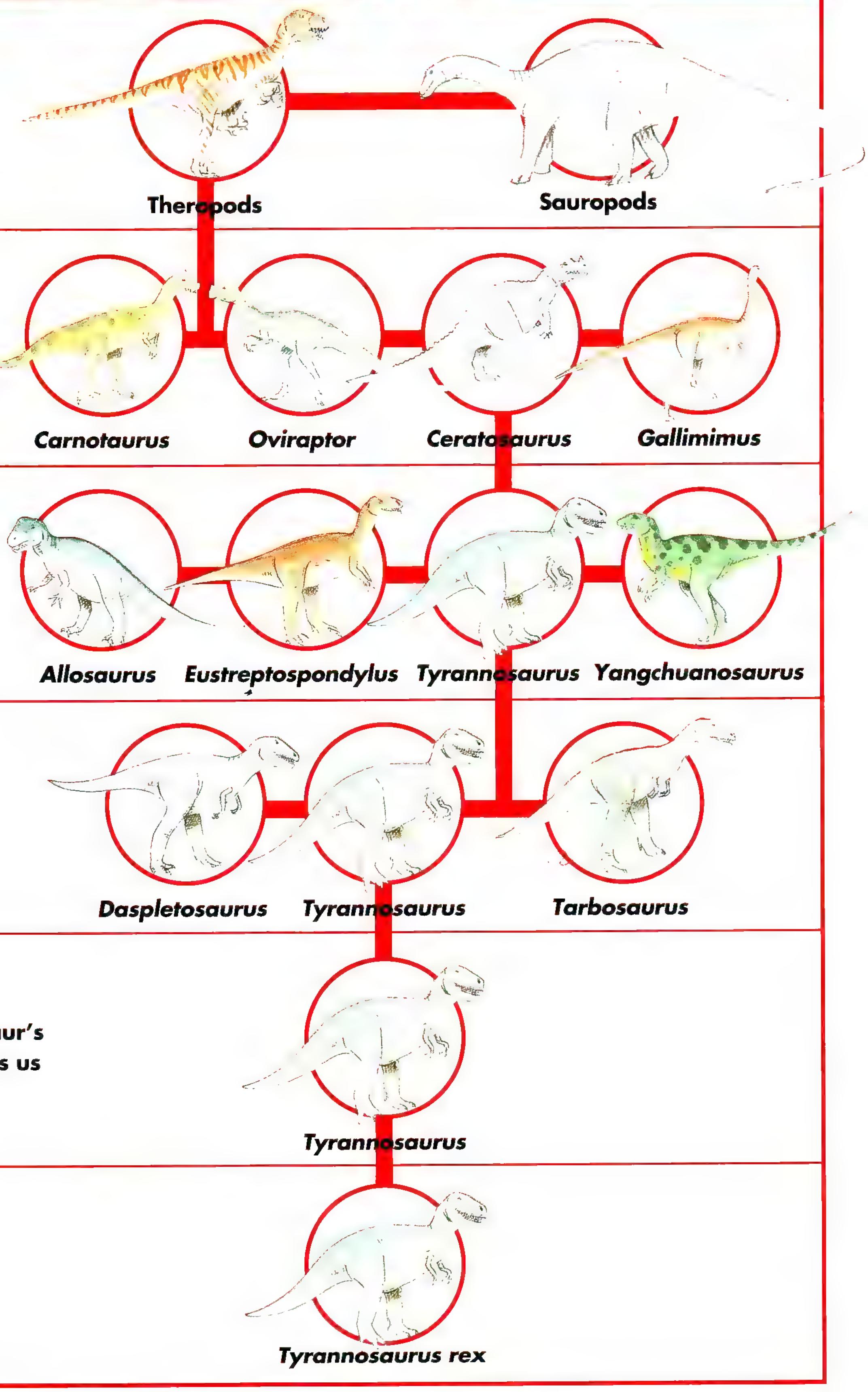
Tyrannosaurus

The first part of the dinosaur's name, ***Tyrannosaurus***, tells us what Genus (type), of dinosaur it is.

SPECIES:

Tyrannosaurus rex

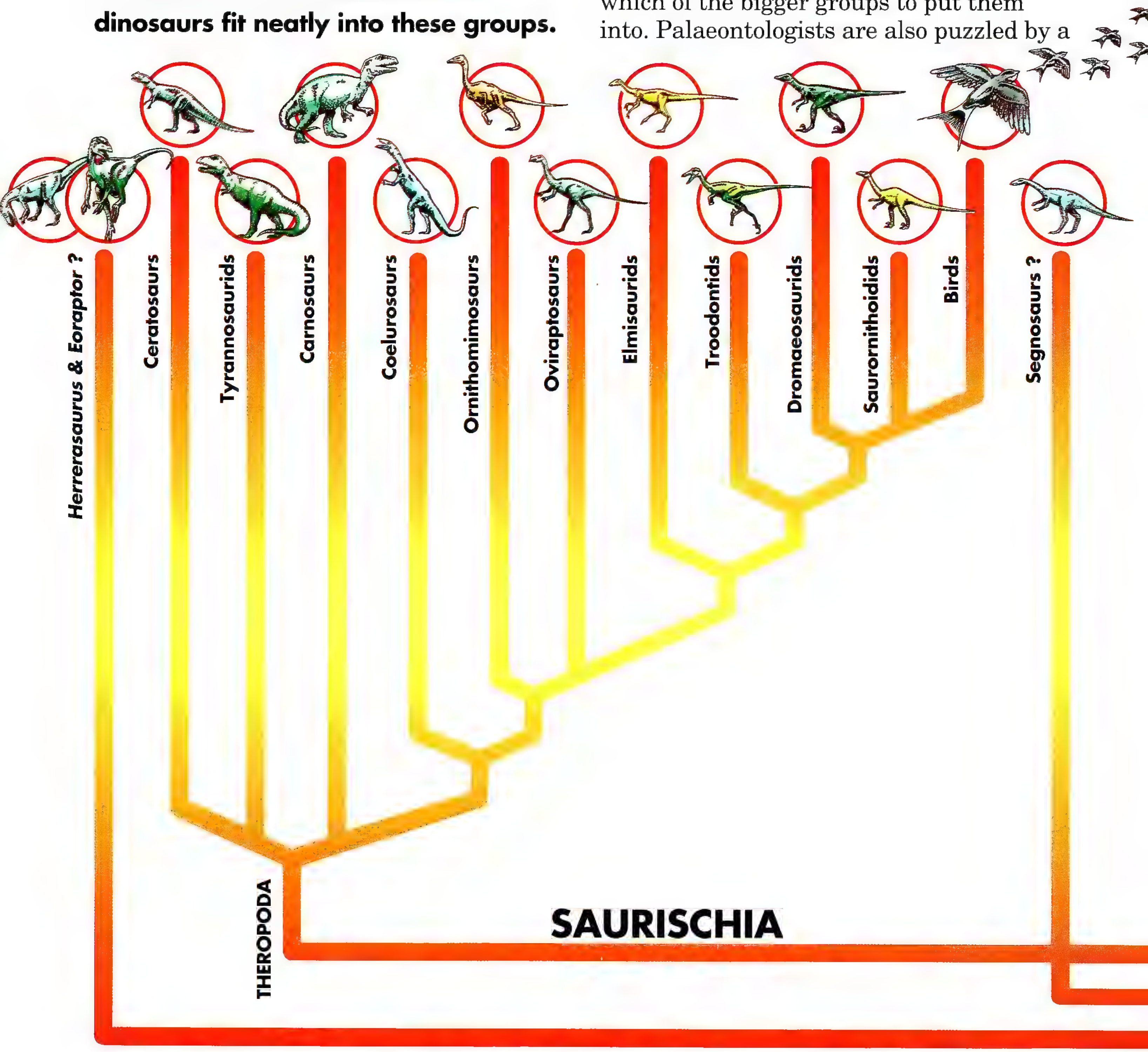
The second part of its name, ***rex***, means it is a new Species, or kind of ***Tyrannosaurus***.



The dinosaur

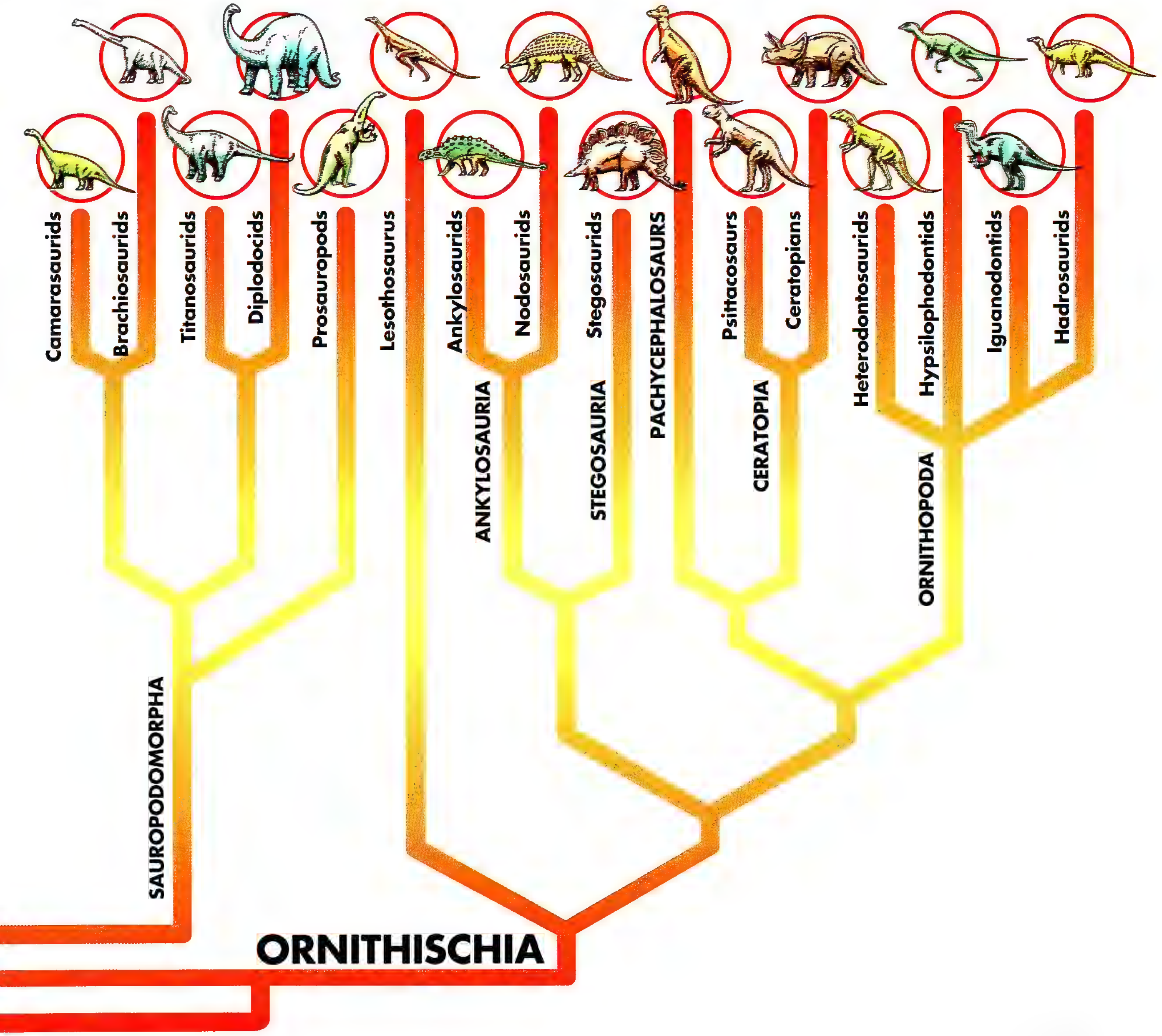
This chart shows the dinosaur Family Tree. Begin with the Orders Saurischia and Ornithischia then follow the branches to the families. Not all dinosaurs fit neatly into these groups.

The earliest dinosaurs, *Herrerasaurus* and *Eoraptor* appeared in the Late Triassic, but scientists do not yet know which of the bigger groups to put them into. Palaeontologists are also puzzled by a



Family Tree

mysterious group of dinosaurs called the segnosaurs, which was discovered in 1979. So far, very little is known about these animals but the segnosaurs may change their position in the dinosaur Family Tree when more is discovered about them. Birds appear on the chart because scientists now believe dinosaurs may have evolved into birds. The closest dinosaur relatives of modern birds are most likely to be the dromaeosaurids, which include *Deinonychus*, or ‘terrible claw’.



THE MAN WHO NAMED DINOSAURS

FRIEDRICH VON HUENE WAS BORN INTO A WEALTHY GERMAN FAMILY IN 1875. HE SPENT MUCH OF HIS CHILDHOOD ON THE FAMILY ESTATE.

WHEN HE WAS 13, HE WAS SENT TO SCHOOL IN SWITZERLAND.

DON'T FORGET TO WRITE.
I PROMISE MOTHER.
GOOD LUCK, SON.

IN 1921, NEAR THE SLEEPY LITTLE TOWN OF TRÖSSINGEN WHERE SOME DINOSAUR BONES HAD BEEN DISCOVERED, VON HUENE WAS ASKED TO LEAD THE DIG.

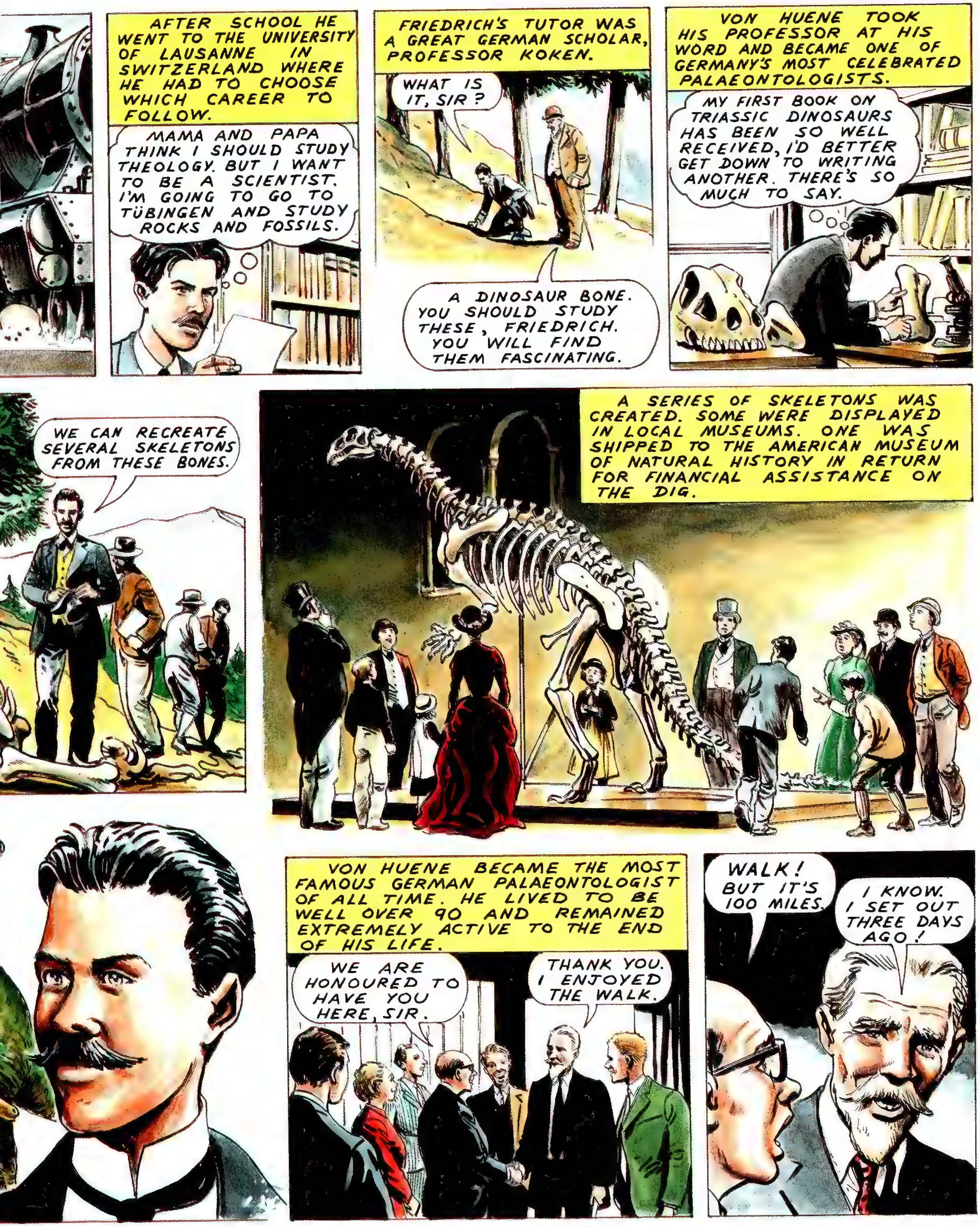
MEIN GOTT! LOOK AT THIS.
THERE'S SOMETHING HERE...
...AND HERE.
THIS IS OBVIOUSLY A MAJOR FIND.

VON HUENE WAS RIGHT. A HUGE NUMBER OF PLATEOSAUR BONES WAS FOUND IN THE FOSSIL BEDS AT TRÖSSINGEN.

IN THE EARLY 1920s, DINOSAUR BONES WERE DISCOVERED IN SOUTH AMERICA. IT WAS A MAJOR DISCOVERY AND SOON THE MUSEUM AT LA PLATA WAS OVERFLOWING.

WE NEED SOMEONE TO HELP US IDENTIFY ALL THESE.
WE SHOULD REALLY CONTACT FRIEDRICH VON HUENE.

VON HUENE SAILED TO SOUTH AMERICA AND WAS SOON AT WORK EXAMINING THE FOSSILS AND NAMING THEM. BY THE TIME HIS WORK IN EUROPE AND SOUTH AMERICA WAS FINISHED HE HAD NAMED MORE DINOSAURS THAN ANYONE ELSE IN THE WORLD — ALTISPINAX, ANTARCTOSAURUS, BETASUCHUS, CETIOSAURUS AND AT LEAST 23 MORE.


AFTER SCHOOL HE WENT TO THE UNIVERSITY OF LAUSANNE IN SWITZERLAND WHERE HE HAD TO CHOOSE WHICH CAREER TO FOLLOW.
MAMA AND PAPA THINK I SHOULD STUDY THEOLOGY. BUT I WANT TO BE A SCIENTIST. I'M GOING TO GO TO TÜBINGEN AND STUDY ROCKS AND FOSSILS.
FRIEDRICH'S TUTOR WAS A GREAT GERMAN SCHOLAR, PROFESSOR KOKEN.
WHAT IS IT, SIR?
A DINOSAUR BONE. YOU SHOULD STUDY THESE, FRIEDRICH. YOU WILL FIND THEM FASCINATING.
VON HUENE TOOK HIS PROFESSOR AT HIS WORD AND BECAME ONE OF GERMANY'S MOST CELEBRATED PALAEONTOLOGISTS.
MY FIRST BOOK ON TRIASSIC DINOSAURS HAS BEEN SO WELL RECEIVED, I'D BETTER GET DOWN TO WRITING ANOTHER. THERE'S SO MUCH TO SAY.
WE CAN RECREATE SEVERAL SKELETONS FROM THESE BONES.
A SERIES OF SKELETONS WAS CREATED. SOME WERE DISPLAYED IN LOCAL MUSEUMS. ONE WAS SHIPPED TO THE AMERICAN MUSEUM OF NATURAL HISTORY IN RETURN FOR FINANCIAL ASSISTANCE ON THE DIG.
VON HUENE BECAME THE MOST FAMOUS GERMAN PALAEONTOLOGIST OF ALL TIME. HE LIVED TO BE WELL OVER 90 AND REMAINED EXTREMELY ACTIVE TO THE END OF HIS LIFE.
WE ARE HONOURED TO HAVE YOU HERE, SIR.
THANK YOU. I ENJOYED THE WALK.
WALK! BUT IT'S 100 MILES.
I KNOW. I SET OUT THREE DAYS AGO!

Improve and test your knowledge with...

DINO Fact File

Eccentric explorer

Some people think that dinosaurs are still alive! Explorer Bill Gibbons is looking for live dinosaurs after strange reports of sightings in the swampy forests of the Congo, Africa!

Fascinating dinosaur facts to read and 10 fun questions to answer.

1 Many North American dinosaur fossils have been found in:
a) New York
b) the Badlands
c) the Grand Canyon

2 *Parasaurolophus* lived in the:
a) Late Jurassic
b) Early Triassic
c) Late Cretaceous

3 Which dinosaur was the 'king of the carnosaurs' during the Jurassic?
a) *Allosaurus*
b) *T rex*
c) *Ultrasaurus*

4 To which Family of dinosaurs did *T rex* belong?
a) *Brachiosauridae*
b) *Ceratopsidae*
c) *Tyrannosauridae*

5 Scientists can tell how big dinosaurs' lungs were by the size of their:
a) feet
b) skull
c) rib cage

6 What did *Edmontosaurus* eat?
a) meat
b) plants
c) fish

7 What did *Ingenia* use its three fingers for?
a) to dig holes
b) to grab hold of small animals
c) to climb trees

8 How long was plant-eating *Barapasaurus?*
a) 8m
b) 18m
c) 28m

9 *Panoplosaurus* was built like:
a) an armoured tank
b) a tall building
c) a light-boned bird

The Grouchless Gang

The 1919 Gobi Desert expedition was tough going, but its leader, Roy Chapman Andrews made sure it was fun as well. Before setting out he wrote some rules for the expedition members. They included a rule against swearing about the weather or complaining about sand in the soup. The plans were signed 'The Grouchless Gang'!

Dinosaur freeway

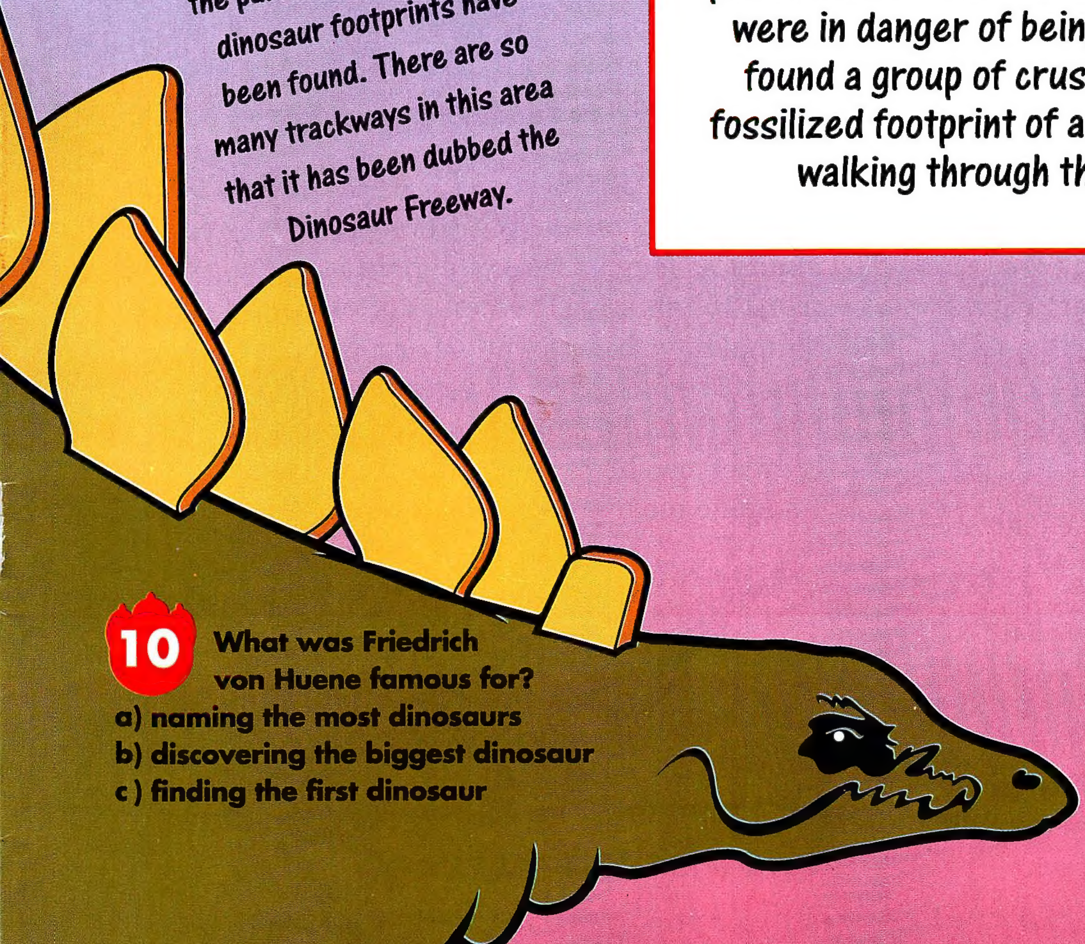
If you are lucky enough to visit Dinosaur Ridge near Denver, USA, you can tour the park where hundreds of dinosaur footprints have been found. There are so many trackways in this area that it has been dubbed the Dinosaur Freeway.

Watch those feet!

Massive sauropods made quite an impact on the environment. They were so heavy that every time they put down a foot small animals and plants in their path were in danger of being squashed. Scientists have found a group of crushed clams embedded in the fossilized footprint of a Jurassic sauropod which was walking through the lake where they lived.

Mix up

In 1975 experts realized that a skeleton of a dinosaur known as 'Brontosaurus' was really two different dinosaurs. The head of a dinosaur similar to Camarasaurus had been attached by mistake to the body of an Apatosaurus for 100 years.



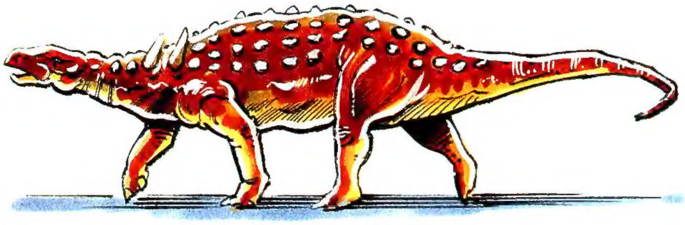
10 **What was Friedrich von Huene famous for?**

a) naming the most dinosaurs
b) discovering the biggest dinosaur
c) finding the first dinosaur

Answers to the questions on inside back cover

PANOPLOSAURUS **75 MYA**

Panoplosaurus (pan-o-ploe-saw-rus) means 'fully-armoured reptile'. Built like an armoured tank, this four-legged animal lived in North America in the Late Cretaceous Period. It was about as long as an elephant and had bony plates all the way along its back. Its skull was made of slabs of bone which were fused together for extra protection. *Panoplosaurus* nipped off low-growing plants with its leaf-shaped teeth.



PARANTHODON **120 MYA**

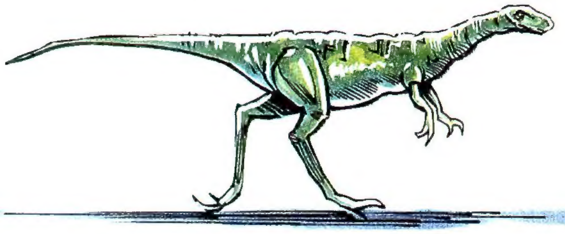
Once called *Anthodon* or 'flower tooth', this stegosaur was found in Cape Province, South Africa. *Paranthodon* (par-an-tho-don) walked on four legs and was longer than a car. It probably had two rows of plates or spikes which stood up from its neck, back and tail. Only one part of *Paranthodon*'s skull has ever been found. This fossil showed that it had ridged teeth like *Kentrosaurus*.

PARASAUROLOPHUS **80 MYA**

Parasaurolophus (par-a-saw-roh-loaf-us) had an amazing tubular crest which ran from its snout for almost 2m. Experts think this two-legged hadrosaur was able to make its own special calls. It was longer than a double decker bus and lived in Alberta, Canada during the Late Cretaceous Period.

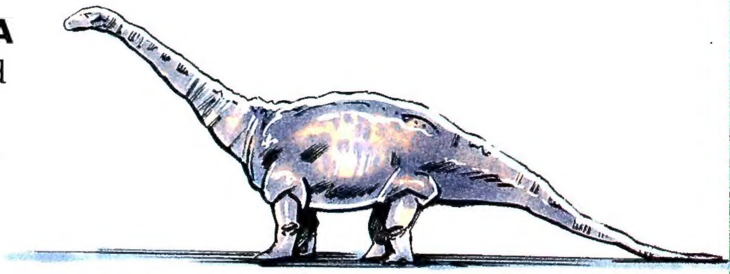
PARKSOSAURUS **70 MYA**

Parksosaurus (parks-oh-saw-rus) was named after a Canadian palaeontologist called William Parks. Its name means 'Parks' lizard'. When this small, two-legged plant-eater was found in Alberta, Canada, its left side had been preserved in sand, but most of its right side had disappeared. *Parksosaurus* was about as long as a small car. Its small head had a horny beak and huge eyes. It ran fast on two slender legs with its long tail held out stiffly behind it.



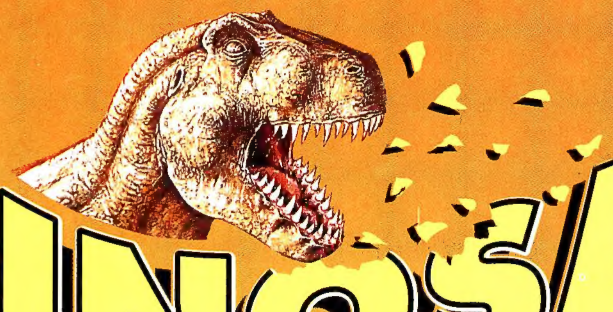
PATAGOSAURUS **150 MYA**

Huge *Patagosaurus* (pat-ag-oh-saw-rus) was almost as long as three elephants standing trunk to tail. Five incomplete skeletons of the animal have been found in Argentina, South America, since 1977. *Patagosaurus* had peg-like teeth and a small head and probably browsed on shoots at the top of tall trees. Its name means 'Patagonian reptile'.



MYA = MILLION YEARS AGO

COMING IN PART 36 OF



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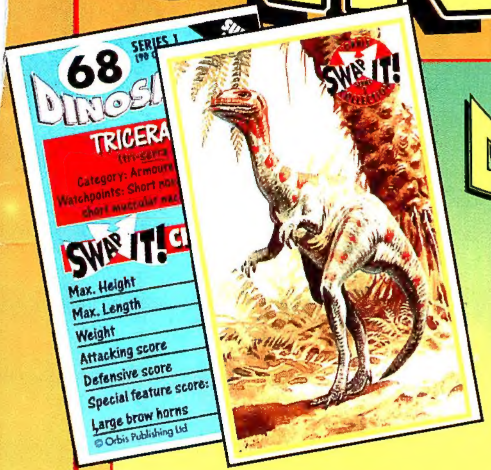

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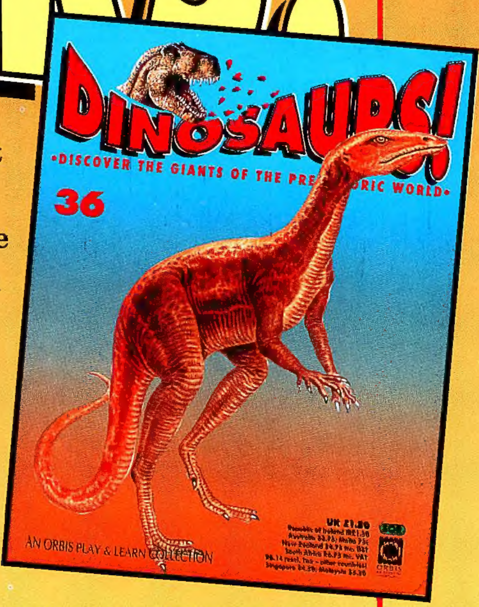
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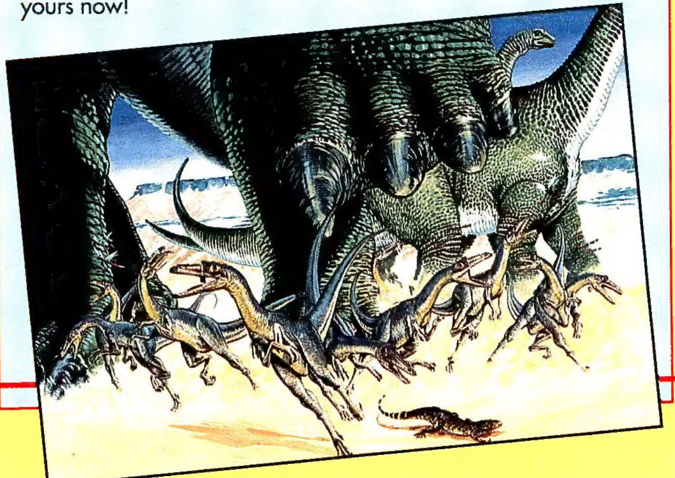

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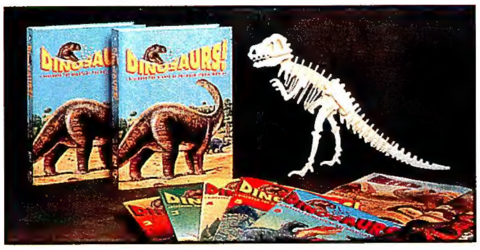

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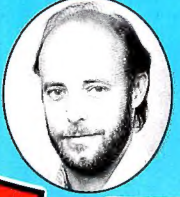
Artwork: Black Hat 840, Mike Dorey 836/7; Wayne Ford/WLAA 833; Edwina Goldstone/WLAA 819; Grisewood and Dempsey/Kevin Maddison 818 BR, 820 TR, 821 B; Deirdre McHale: BC. Stephen Message/WLAA 832 BR; Andie Peck/WLAA 839 TR; Nicholas Pike/WLAA 822/3; Clive Pritchard/WLAA 824/5; Steve Roberts/WLAA 830/1; Graham Rosewarne 820, 821 B; Peter David Scott/WLAA 826/7; Studio B 834/5; Steve White 828/9

ANSWERS TO DINO FACT FILE QUESTIONS: 1.b 2.c 3.a 4.c 5.c 6.b 7.b 8.b 9.a 10.a



Dr. David Norman of Cambridge University answers your dinosaur questions

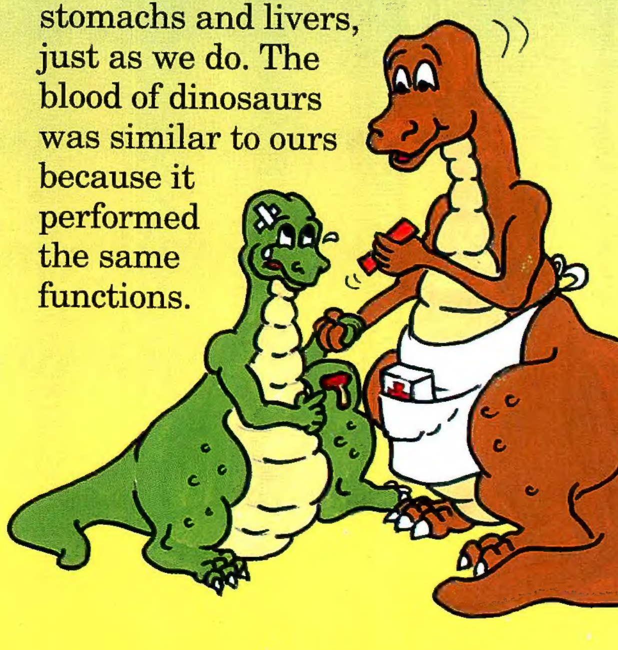
ASK THE EXPERT

Where in the world did dinosaurs live most?

About 145 million years ago Colorado, Wyoming and Utah in the USA had large numbers of sauropods, including *Diplodocus*. There were also predators such as *Allosaurus,* and other plant-eaters, such as *Stegosaurus*. About 65 million years ago Alberta in Canada, and Montana in the USA had large herds of duckbills and horned dinosaurs. Dinosaurs were also common in East Africa, Germany, Britain, Belgium, Argentina, Mongolia and Sichuan Province in China.

Did dinosaurs bleed?

All dinosaurs would have bled if injured. Their bodies were made of the same basic parts as our own, so they had hearts, lungs, stomachs and livers, just as we do. The blood of dinosaurs was similar to ours because it performed the same functions.



Which was the biggest insect in the time of the dinosaurs?

I am afraid I cannot tell you. Insects do not make good fossils as their bodies tend to fall apart and rot very quickly. Some quite large dragonflies have been preserved in fine limestones that were laid down in lagoons during the Jurassic Period in Germany, and these are among the largest insects that I know of during the Age of the Dinosaurs. They had a wingspan of about 12cm.

Were dinosaurs colour blind?

We do not know for certain whether they could see in colour. However, dinosaurs undoubtedly had large eyes, and good, sharp vision, as many recognised each other by sight. Some dinosaurs had crests and horns which gave them an individual and recognisable shape. If they used shape to recognise one another, it seems likely that they used colour too, as many reptiles do today.

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